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MATHEMATICS
Preparation 10

Module 1

Exploration of Numbers

Learning Technologies Branch

Assignment Booklet 1A

Alberta LEARNING

FOR TEACHER'S USE ONLY

Summary

	Total Possible Marks	Your Mark
Section 1 Assignment	30	

Teacher's Comments

This document is intended for	
Students	✓
Teachers	✓
Administrators	
Parents	
General Public	
Other	

Mathematics Preparation 10
Module 1: Exploration of Numbers
Assignment Booklet 1A
Section 1 Assignment
Learning Technologies Branch
ISBN 0-7741-1738-9

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ASSIGNMENT BOOKLET 1A
MODULE 1: EXPLORATION OF NUMBERS
SECTION 1 ASSIGNMENT

Your mark for this module will be determined by how well you do your assignments in the Assignment Booklets.

This Assignment Booklet is worth 30 marks out of the total 100 marks for Module 1.

Work slowly and carefully. If you are having difficulties, go back and review the appropriate topic.

Be sure to proofread your answers carefully.

(30)

Section 1 Assignment: Multiples and Factors

Read all parts of your assignment carefully and record your answers in the appropriate places. Clearly show how you arrived at your answers by showing your work.

(1) **1.** List the first six multiples of 12.

(2) **2.** Determine the least common denominator for $\frac{1}{2}$, $\frac{2}{3}$, and $\frac{7}{15}$.

(2) **3.** If $2.5 \times 10 = 25$, 25 is a multiple of 10? Explain.

(3) **4.** A family is looking at their household budget for the past several years. They realize they have to buy a winter coat every 24 months, buy boots every 12 months, and running shoes every 9 months. In January 2000, the family had to buy a wintercoat, boots, and running shoes. When will be the next time they have to buy the three items in the same month?

(1) **5.** List all the factors of 124.

(3) **6.** Determine the greatest common factor of the numerator and denominator of $\frac{28}{288}$, and divide both the numerator and denominator by this number to obtain an equivalent fraction in lowest terms.

(2) **7.** Julie bought some T-shirts on sale for $18 (excluding tax). Kate bought some of the same type of T-shirts for a total cost of $30 (excluding tax). What is the most each T-shirt could have cost (excluding tax)?

(2) **8.** List the common factors of 48 and 80. Clearly indicate which factor is the greatest common factor.

(4) **9.** Rachel has from 32 to 40 miniatures. These miniatures cannot be arranged in rows of 2, 3, or 5 without leftovers. How many miniatures does Rachel have?

(2) **10.** A common multiple between two numbers can be determined by multiplying the two numbers together. The product of these numbers may or may not be the least common multiple.

Provide an example where the product of two numbers is the least common multiple.

(1) **11.** Write the prime factorization of 90.

(3) **12.** Using your knowledge of divisibility tests, write a 3-digit number that is divisible by 4 and by 5. Using the divisibility tests, explain why your number is divisible by 4 and 5.

(4) **13.** Three brothers—Albert, Bob, and Carl—have moved away from their home to town. Albert returns home every 2 years, Bob returns every 3 years, and Carl returns every 4 years. The brothers all went home together in 1999. If this pattern continues, what year will they go home in the same year again?

Mathematics
Preparation 10
Assignment Booklet 1A
Module 1
2000

MATHEMATICS
Preparation 10

Module 1

Exploration of Numbers

Learning Technologies Branch

Assignment Booklet 1B

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Summary

	Total Possible Marks	Your Mark
Section 2 Assignment	39	

Teacher's Comments

This document is intended for	
Students	✓
Teachers	✓
Administrators	
Parents	
General Public	
Other	

Mathematics Preparation 10
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Assignment Booklet 1B
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ASSIGNMENT BOOKLET 1B
MODULE 1: EXPLORATION OF NUMBERS
SECTION 2 ASSIGNMENT

Your mark for this module will be determined by how well you do your assignments in the Assignment Booklets.

This Assignment Booklet is worth 39 marks out of the total 100 marks for Module 1.

Work slowly and carefully. If you are having difficulties, go back and review the appropriate topic.

Be sure to proofread your answers carefully.

(39)

Section 2 Assignment: Operations with Integers

Read all parts of your assignment carefully and record your answers in the appropriate places. Clearly show how you arrived at your answers by showing your work.

1. Write an integer to represent each of the following situations.

(1) **a.** 15°C below freezing

_____

(1) **b.** $125 overdrawn in a chequing account

_____

(1) **c.** 12-yard gain in football

_____

(1) **d.** 3 over par in golf

_____

(1) **e.** a million-dollar deficit

_____

(1)

2. The following table shows the daytime high temperatures of five Canadian cities.

City	Temperature
Halifax	3°C
Toronto	5°C
Winnipeg	−17°C
Edmonton	−23°C
Lethbridge	−1°C

Write the temperatures from least to greatest.

_____

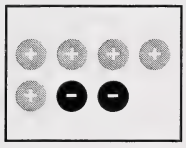
(10)

3. State the opposite action of each of the following. Then express each opposite action as an integer.

Action	Opposite Action	
	Statement	Integer
ascending 20 m		
credit of $100		
loss of 10 yards		
down 8 flights of stairs		
profit of $25		

(3) **4.** Beside each diagram, state the integer modelled.

a.



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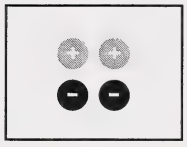
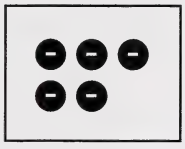


c.



(3) **5.** Pretend your friend does not know how to subtract integers. Model the example $(-5)-(+2)$ to help explain subtraction of integers. Clearly describe all your steps.

(4) **6.** The scoring for a card game called Wizard is as follows:

- 20 points for correctly predicting the number of tricks taken and 10 additional points for each trick predicted and won
- a loss of 10 points for each trick the player is over or below his or her predicted number of tricks

For example, if a player predicts taking 8 tricks and gets 8 tricks, the player earns $20+(10\times 8)$ points, which is 100 points. If a player predicts taking 5 tricks and only gets 3, he or she is short 2 tricks. Therefore, the player's points would be $2\times(-10)=-20$.

Calculate Tim's total score by completing the following table.

Tim's Predicted Number of Tricks	Tricks Actually Obtained	Calculation	Score
1	3	3	
2	4	4	
3	0	0	
4	4	4	
5	1	1	
		Total	

7. Use integers to represent each situation; then solve the problem.

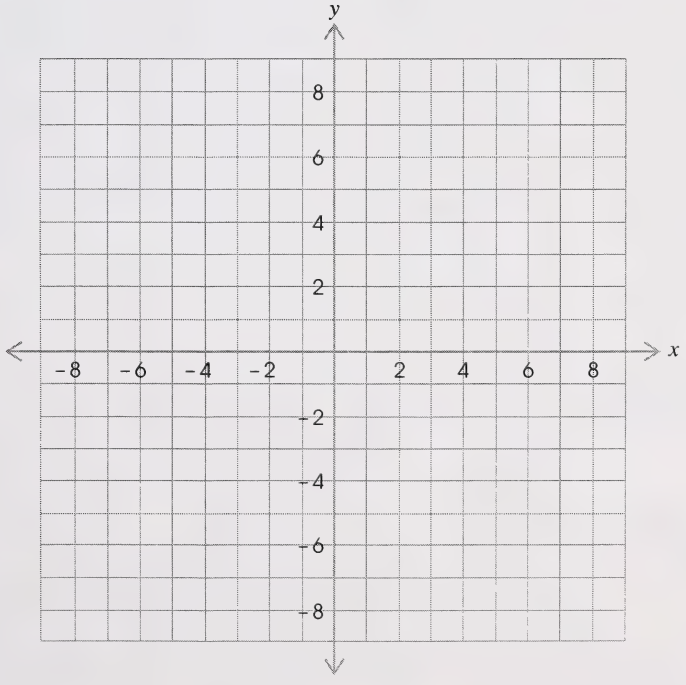
(2) **a.** Paul's opening bank balance is \$20 overdrawn; then he deposits his birthday money of \$50. How much money is in Paul's account?

(2) **b.** The temperature in the morning was 18°C. Since then, it has gone up 7°. What is the current temperature?

(2) **c.** Sandy owes her parents \$50, and she pays them back \$10. How much does she still owe her parents?

(7) **8.** Plot these points on the following graph.

- $(2, 8)$
- $(0, 0)$
- $(-4, -8)$
- $(-3, 4)$
- $(0, -5)$
- $(2, -5)$
- $(2, 0)$



Mathematics
Preparation 10
Assignment Booklet 1B
Module 1
2000

MATHEMATICS
Preparation 10

Module 1

Exploration of Numbers

Learning Technologies Branch

Assignment Booklet 1C

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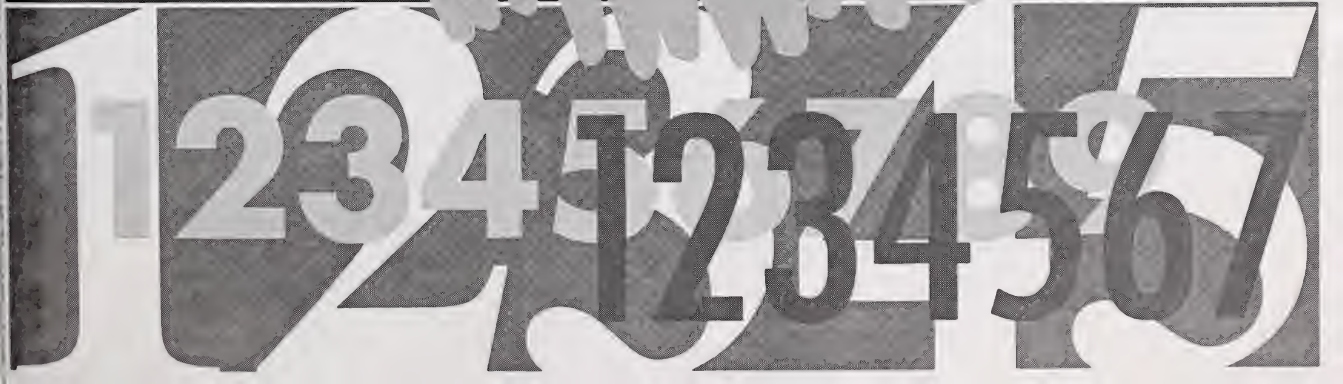

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Summary

	Total Possible Marks	Your Mark
Section 3 Assignment	31	

Teacher's Comments

This document is intended for	
Students	✓
Teachers	✓
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Mathematics Preparation 10
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ASSIGNMENT BOOKLET 1C
MODULE 1: EXPLORATION OF NUMBERS
SECTION 3 ASSIGNMENT

Your mark for this module will be determined by how well you do your assignments in the Assignment Booklets.

This Assignment Booklet is worth 31 marks out of the total 100 marks for Module 1.

Work slowly and carefully. If you are having difficulties, go back and review the appropriate topic.

Be sure to proofread your answers carefully.

(31)

Section 3 Assignment: Exponential Notation

Read all parts of your assignment carefully and record your answers in the appropriate places. Clearly show how you arrived at your answers by showing your work.

(6)

1. Evaluate each of the following.

a. 15^3

b. -4^6

c. $(-5)^7$

d. 3^{-4}

e. 0.25^0

f. $\left(\frac{1}{2}\right)^{-2}$

2. Write the following in exponential form.

(1) **a.** $0.1 \times 0.1 \times 0.1$

(1) **b.** $(-4) \times (-4) \times (-4) \times (-4)$

(1) **c.** $-(10 \times 10 \times 10 \times 10 \times 10)$

(3) **3.** Write each of the following as a single power.

a. $5^6 \times 5^{-4}$

b. $(8^2)^3$

c. $0.8^4 \div 0.8^{-3}$

(2) **4.** Explain why you cannot write $12^5 \times 4^3$ as a single power.

_____

_____

_____

5. Evaluate the following expressions.

(2) **a.** $4^2 - [6 - 2(7-1)] - 6^2 \div 4$

(2) **b.** $5^2 + 6^2 \times 2 \div 3^2 + 14$

(2) **c.** $\dfrac{3(8^2 - 6^2)}{3-9}$

(2) **d.** $4(7-2)^2 - (10 \div 2)^2$

6. Express each of the following in scientific notation.

(1) **a.** The area of Canada is about 9 920 000 km^2.

_____

(1) **b.** A helium atom has a diameter of about 0.000 000 022 cm.

_____

(1) **c.** Hair grows about 0.000 11 cm each hour.

_____

(3) **7.** A film of oil on water is 5×10^{-8} cm thick. What area does 800 cm^3 of oil cover on water?

(3) **8.** The human body is made up of about 6.0×10^9 cells. Each cell is made up of about 6.3×10^9 atoms. About how many atoms are in the human body?

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Assignment Booklet 1C
Module 1
2000